UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 305 PLATE 21


SERIES
GROUP
FORMATION
MICROFAUNAL ZONE
HEAVY-MINERAL ZONE
DEPTH (IN FEET)
SPONTANEOUS POTENTIAL (MILLIVOLTS) − 40 +
COMPOSITION
RESISTIVITY (OHMS m²/m) LN SN
SELECTED LITHOLOGIC DESCRIPTION
FORMATION TEST
DIP
DEVIATION
CORE NUMBER RECOVERY (FEET-INCHES)
HOLE DIAMETER AND CASING DIAMETER (IN INCHES)
REVOLUTIONS PER MINUTE
WEIGHT ON BIT (TONS)
RATE OF PENETRATION (DASHED WHERE CORED) AVERAGE MINUTES PER FOOT
CORE BIT NUMBER (SIZE IN INCHES)
DRILL BIT (SIZE IN INCHES) (DASHED WHERE REAMED)
PLEISTOCENE
GUBIK
LOWER CRETACEOUS
NANUSHUK
CHANDLER (KILLIK TONGUE)
GRANDSTAND
TOPAGORUK
Verneuilinoides borealis
Euhedral zircon
Zoned zircon at 4120
Ground level
Sea level
RUN 2
RUN 3
RUN 4
RUN 5
RUN 6
LN = LONG NORMAL
SN = SHORT NORMAL
SHORT NORMAL AM = 16 INCHES
LONG NORMAL AM = 72 INCHES
Gravel, sand, silt, ice
Coal, black, vitreous, bituminous, with blocky fracture
Clay shale, soft, sticky
Clay shale, medium-light-gray, soft, coal and brownish-gray silty noncalcareous clay ironstone
Sandstone, medium-light-gray, very fine-grained, silty, argillaceous
Clay shale, medium-light-gray, calcareous; black clay shale and coal in upper part. Sandstone and medium-light-gray argillaceous calcareous siltstone, present throughout. Clay ironstone common
Sandstone as above, with rare carbonaceous particles; grains subangular clear, white, or gray quartz
Coal, with interbedded soft gray clay shale
Clay shale, medium-light-gray, with siltstone, sandstone, and clay ironstone. Coal rare
Siltstone, medium-light-gray, micaceous, slightly carbonaceous; crossbedded in part. Medium- to medium-dark-gray claystone; subconchoidal fracture; carbonized plant fragments
Clay shale, medium-light- to dark-gray, and siltstone
Coal; coal gas in ditch
Sandstone, medium-light-gray, argillaceous, silty
Siltstone and gray clay shale, with streaks of coal, ironstone concretions, some black shale
Coal, with gray shale streaks, clay ironstone concretions; shows of coal gas in ditch
Clay shale, medium-gray, with some siltstone, sandstone, coal, and clay ironstone concretions
Sandstone, with streaks of coal, siltstone, and shale
Sandstone, with streaks of coal, siltstone, shale
Clay shale, medium-light-gray; siltstone, sandstone, coal and clay ironstone
Coal; rare shale, sandstone, clay ironstone
Interlaminated coal and black shale
Carbonaceous clay shale grading to claystone, medium-dark- to dark-gray, with abundant to scattered carbonized plant fragments
Clay shale, medium-light- to medium-dark-gray; sandstone; siltstone. Coal and ironstone in upper 40 ft. Silty limestone at 640 and 660 ft. Sandstone and siltstone decrease with depth
Clay shale as above, with streaks of coal
Coal, with rare clay ironstone
Clay shale, medium-light- to dark-gray; coal beds; ironstone increases with depth
Coal, interlaminated with dark-gray shale
Clay shale, olive-gray, with scattered flakes of carbonized plants
Siltstone, light-gray, argillaceous, with scattered flakes of carbonaceous material and rare sandy micaceous streaks
Claystone, medium-gray, slightly silty and micaceous.
Clay shale and coal, scattered clay ironstone
Coal, with streaks of medium-gray clay shale
Interbedded coal and shale; shale increases with depth. Small amount siltstone
Coal, with interbedded shale and siltstone
Siltstone, medium-light-gray, argillaceous, micaceous, with irregular laminae of medium-dark-gray clay. Clay ironstone one-half inch thick near base of core
Sandstone, light-yellowish-gray; subangular to rounded grains, dominantly quartz
Clay shale, medium- to medium-dark-gray; slightly calcareous in part with siltstone and coal
Sandstone, light-gray, friable, noncalcareous
Clay shale, medium- to medium-dark-gray; slightly calcareous in part; and black noncalcareous fissile clay shale, with streaks of siltstone, sandstone, coal. Pyrite rare
Sandstone and some clay shale
Clay shale, olive-gray, with medium-gray clay patches and abundant carbonized plant fragments
Claystone, medium-gray, micaceous; slightly silty in upper part; scattered carbonized plant remains
Clay shale as above, with coal, clay ironstone, and sandstone streaks at base
Coal, with some clay shale
Interbedded coal and clay shale, with siltstone streaks, rare sandstone
Interbedded clay shale and siltstone, with streaks of sandstone and coal
Clay shale, medium-dark- to dark-gray; slightly silty in part; contains rare carbonized plant remains; interbedded with light- to medium-light-gray argillaceous siltstone, with a few partings of dark-gray clay shale
Sandstone, medium-light-gray, with rare streaks of siltstone and shale
Clay shale, medium- to medium-dark-gray, with small amount of coal, clay ironstone, sandstone, and siltstone
Sandstone, light-gray, with carbonaceous streaks Composed of clear white subangular quartz grains; no mica or pyrite
Sandstone as above, with rare streaks of clay shale, increasing with depth
Clay shale, medium- to medium-dark-gray; rare coal
Clay shale, medium-dark-gray, with thin beds and laminae of medium- to medium-light-gray siltstone. Possible intraformational conglomerate of siltstone in shale below 2074 ft
Clay shale, medium-dark-gray; and black fissile clay shale, with sandstone streaks and rare carbonaceous material. Medium-gray siltstone increases with depth
Sandstone, medium-light-gray
Sandstone and siltstone, with medium-dark-gray clay shale streaks
Clay shale, medium-dark-gray, with some medium-gray siltstone and medium-light-gray sandstone. Coal very rare
Claystone, medium-dark- to dark-gray with two clay ironstone nodules; grades into unit below
Clay shale, medium-dark-gray, with medium-gray silty clay shale laminae; carbonaceous micaceous partings, clay ironstone, contemporaneously deformed bedding
Sandstone, of subangular grains of clear to milky quartz; poorly sorted, friable
Sandstone, as in core 9
Test 4, 0-3038 ft: Hole bailed to 700 ft, and then began to flow gas. Critical flow prover measured 124,500 cu ft gas per day at 74 psi, 74°F, with 1/4-in. orifice; 301,000 cu ft gas per day at 39 psi, 57°F, with 1/2 in. orifice. Drilling-mud level 225 ft; mud gas-cut at 1300 ft. Second test recorded 718,000 cu ft per day at 110 psi, 42°F, 1/2 in. orifice; 1,090,000 cu ft per day at 70 psi, 42°F, 3/4-in. orifice; 1,132,000 cu ft per day at 35 psi, 38°F, 1-in. orifice
Test 7, 2494-2783 ft: Packer set at 2494 ft had strong blow for 10 min decreasing to faint blow. Well flowed gas intermittently on swabbing
Test 5, 2566-2783 ft: Test for water shut-off in 7-in. casing had packer at 2566 ft, tail pipe at 2577 ft, 4 perforations in casing at 2560 ft. Slight blow for 1 min; drilling mud rose 450 ft in 30 min
Sandstone, light-gray, poorly sorted, friable; composed of subangular clear and white quartz and scattered dark grains; less friable toward base
Clay shale, medium-dark-gray, with streaks of light-gray friable siltstone and sandstone
Sandstone, light-gray, poorly sorted
Clay shale, medium-dark-gray, with siltstone and sandstone streaks
Clay shale, medium-dark-gray, silty, micaceous, pyritic, hard
Sandstone, light-gray, poorly sorted, subangular; carbonaceous partings abundant, bedding flat (cross-bedding, ripple marks, deformed bedding in lower part); beds of medium-dark-gray silty clay shale are 6 in. thick at 2951 ft and 7 in. thick at 2964 ft. Porosity 19.2 percent; permeability 13.48 millidarcys parallel to bedding at 2953 ft, and 7.76 percent and 9.54 millidarcys at 2967 ft
Clay shale, medium-dark-gray, with thin beds of medium- to medium-light-gray siltztone and light-gray sandstone
Clay shale, dark-olive-gray, micaceous, hard; has slight satin sheen. Two thin sand veins dipping approximately 65° at 3257 ft are probably crack fillings
Clay shale, medium-dark-gray, noncalcareous, slightly micaceous
Sandstone, light-yellowish-gray
Clay shale, medium-dark-gray
Sandstone, light-yellowish-gray
Clay shale, medium-dark-gray, and interbedded sandstone and siltstone decreasing with depth
Clay shale, medium-dark-gray, finely micaceous
Clay shale, medium-dark-gray
Clay shale, medium-dark-gray, with streaks and beds of siltstone and sandstone
Sandstone, light-gray, hard, predominantly quartz
Clay shale, medium-dark-gray, micaceous; partings, laminae and lenticles of light-gray siltstone in upper 2 in.; ripple marks; crossbedding on small scale
Clay shale, medium-dark-gray, with thin beds of sandstone and siltstone
Sandstone, light-gray, argillaceous, hard, tight; bedding planes 1/2-2 in. apart in upper and lower parts; more massive in center. Carbonate content 31.05 percent at 4123 ft, 10.55 percent at 4130 ft, 11.1 percent at 4133 ft. Porosity 3.14, 5.93, and 9.35 percent, and permeability < 2 millidarcys at same depths, respectively
Interbedded light-gray siltstone and medium-dark-gray micaceous clay shale laminae. Some clay shale beds 2-3 in. thick. Crossbedding, ripple marks, crack fillings present. Siltstone rare below 4150 ft. Slickensides 4152-4153 ft
Alternating clay shale and siltstone laminae, and light-gray hard tight sandstone; 1-in. bed at bottom has poker-chip fracture
Clay shale, medium-dark-gray, micaceous, with irregular fracture
Clay shale, medium-dark-gray, with rare siltstone laminae
Clay shale, medium-dark-gray, slightly micaceous, slightly carbonaceous Evenly interbedded laminae and thin beds vary slightly in color (dark- to medium-dark-gray) and in silt content (none to slightly silty)
Clay shale, medium-dark-gray, with rare siltstone and silty clay shale laminae
Clay shale, medium-dark-gray, slightly micaceous, slightly carbonaceous; slightly silty in some laminae
Clay shale, medium-dark-gray, with silty laminae
Clay shale, medium-dark-gray, very slightly silty, with rare thin beds of dark-gray clay shale and medium-gray silty clay shale. Poor poker-chip cleavage
Test 6, 2652-2783 ft: Packer set at 2652 ft to test perforations at 2690-2696 ft did not hold. Packer failed again when set at 2679 ft
Test 2, 2949-3038 ft: Hole plugged to 3038 ft: Packer at 2949 did not hold
Test 3, 2955-3038 ft: Packer set at 2955 ft did not hold
Test 1, 4116-4184 ft: Packer set at 4116 ft; tester open 1 hr, weak steady blow; recovered 50 ft slightly gassy drilling mud
Total depth 5305

GRAPHIC LOG OF MEADE TEST WELL 1, ALASKA

EXPLANATION

Sandstone
Silty sandstone
Calcareous sandstone
Siltstone
Sandy siltstone
Calcareous siltstone
Clay shale or claystone
Sandy clay shale or claystone
Silty clay shale or claystone
Calcareous clay shale or claystone
Clay ironstone
Coal or carbonaceous material
Limestone
Cored interval
No samples recovered
Oil show
Gas show
vf Very fine grained
f Fine grained
m Medium grained
AM Electrode spacing

BIT SYMBOLS

DRILL BITS

CBRK Crum Brainard rock
HOD Hughes OD
OSQ-2 Hughes OSQ-2
OSQ-3A Hughes OSQ-3A
SHO Security hole opener
C-6 Security C-6
OS-2 Security OS-2
S4P Smith 4 point rock
K-2 Smith K-2

CORE BITS

K-24 Reed K-24 hard formation
K-25 Reed K-25 soft formation
RWLR Reed wire line hard formation

Location:	Lat 70°02'30" N. Long 157°29'23" W.
Elevation:	Kelly bushing 211 feet Ground 197 feet
Spudded:	May 2, 1950
Completed:	August 21, 1950
Total depth:	5305 feet
Status:	Junked and abandoned

Drilling and engineering data compiled from records of Arctic Contractors

Colors were determined by comparison of dry samples with the National Research Council Rock Color Chart, 1948

Electric log by Schlumberger Well Surveying Corporation

All depths are measured from the top of the kelly bushing

INTERIOR-GEOLOGICAL SURVEY, WASHINGTON, D. C. M R-3239

Logged by Florence R. Collins